SULZER

Mixing solutions

SALOMIX™
side-mounted agitators

Mix and match – mixing technology for a more efficient and reliable operation

Get the most efficient mixing by letting Sulzer match your needs. Our side-mounted SALOMIX agitators are designed to use minimal power consumption at high reliability. By applying Sulzer's vast wealth of experience across the industries and the right type of agitator, the best match can be made to ensure the lowest total cost of ownership (TCO).

Process knowledge

When selecting an agitator, the tank size and shape, purpose of mixing and type of liquid are the key factors. Knowing how to predict the degree of agitation – in any tank and for any liquid – is a crucial part of the selection process.

The new SALOMIX family has been designed to operate in demanding applications in various industries. Through a deep understanding of mixing processes, we can match the process with the right agitator in industries like pulp and paper, biofuels, food, chemicals and wastewater.

The versatile range ensures the best match for the specific applications with the help of special features such as dilution concept Dilco, non-clogging hydraulics, wide range of materials and a great variety of seal options.

Efficient operation

Sulzer provides top-efficiency propellers, optimized by extensive laboratory testing and advanced computational fluid dynamics (CFD) calculations.

To match the right agitators is as important when it comes to reducing power consumption. Using an oversized agitator may complete the task, but it will be very costly – more agitation means more power input.

Sulzer gives you the combination of optimum agitator selection and maximum propeller efficiency, which will significantly reduce your overall power consumption.

Reliability

There are a number of factors that affect the reliability of your agitator, such as product design, manufacturing processes and aftermarket service and support. Our high number of testimonials from many different industries, in particular the pulp and paper industry, confirms the reliability of Sulzer products.

Service

Our network of local service centers ensures fast response times and superior customer service. In addition to supplying original spare parts, we are also close by to help you optimize your agitators and reach your process performance, reliability and safety targets.

The new SALOMIX™ family

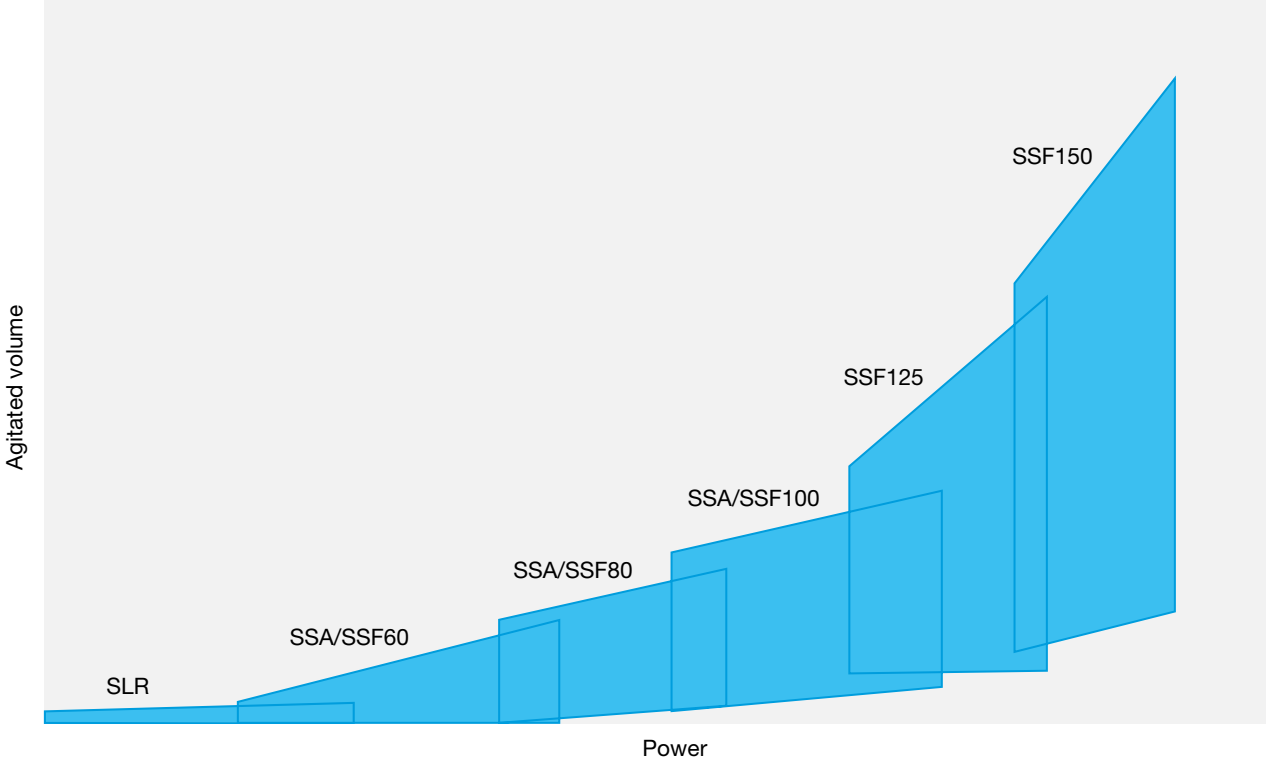
Sulzer continuously strives to reduce the environmental impact and customer cost. The new SALOMIX agitator family has evolved from our long experience in agitator development and is a result of continuously being in the frontline in the agitator business. The SALOMIX family consists of agitators with gear or belt drive, offering the lowest TCO. The high-efficiency hydraulics are further enhanced by deep process know-how, which ensures minimal power consumption.

The new SALOMIX family is a versatile range of modular designs that ensures the right agitator for the specific application. Combine your agitators with suitable hydraulics, drives and seals to mix and match.

SALOMIX side-mounted agitator family includes the following product types:

- SSF gear-driven agitator
- SSA belt-driven agitator
- SLR/STR gear-driven agitator

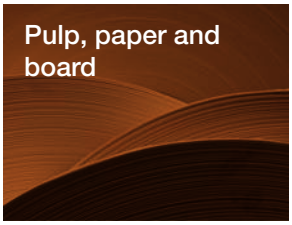
Product type	Hydraulics	Agitator type	Drive	Application
SSF	EX3	In-tank bearing	Gear box	Light – heavy
SSA	EX3	Cantilever	Belt drive	Light – heavy
SLR/STR	SHP	Cantilever	Gear box	Light – medium



Main industries and applications

SALOMIX side-mounted agitators have been designed to meet the process requirements in a wide range of industries and applications to agitate:

- Clean and slightly contaminated liquids
- Viscous liquids
- Fibrous and other slurries



Key customer benefits

The new SALOMIX family is a product range based on our in-depth expertise and long-standing experience in mixing technology, allowing us to maximize the value for our customers.

Maximum efficiency

- New high-efficiency hydraulics (patent pending) for minimized energy consumption
- High pumping capacity and high axial thrust for lower energy input and optimal agitator size selection
- Precise selection – not oversized, not undersized
- Compatible with IE4 motors to maximize total efficiency

High reliability

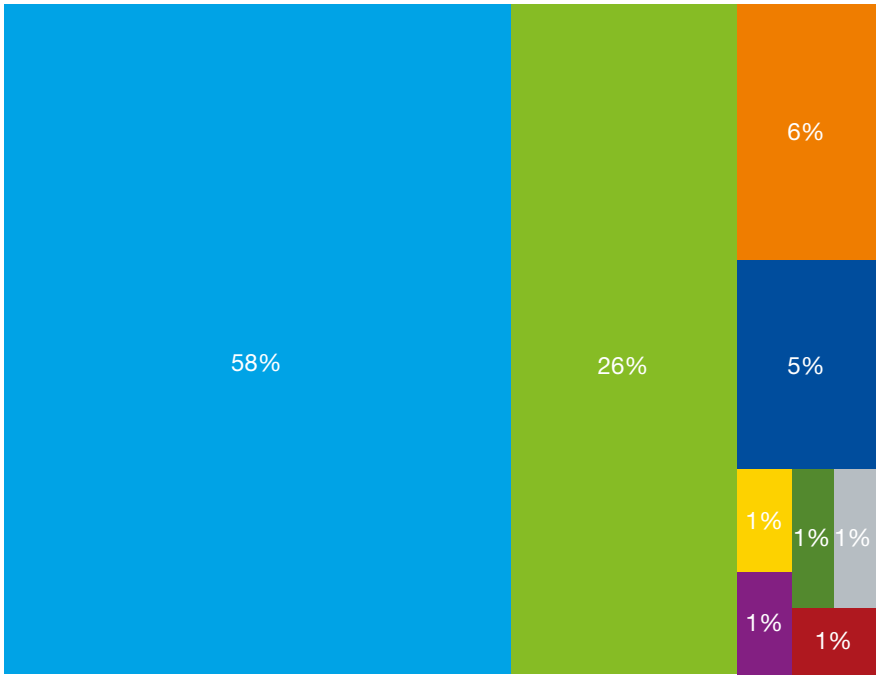
- Long agitator bearing lifetime
- Smooth hydraulics and rigid construction ensure low vibrations and long lifetime of seals and bearings
- In-tank bearing for the toughest applications and longest seal and bearing lifetime, or strong cantilever shaft with minimal deflection

Minimized total cost of ownership (TCO)

- High-efficiency hydraulics provide substantial savings in power consumption
- Adjustable blade angles allow performance flexibility without any additional investments
- Low operational cost and minimized service needs due to robust construction
- Easy and fast installation thanks to innovative design
- Low spare part costs due to high degree of standardization

Service-friendly

- Adjustable blade angles allow performance flexibility without any additional investments
- Service-friendly design for easy maintenance
- Optimizing preventive maintenance by the use of condition monitoring, such as Sulzer Sense



Typical distribution of total cost of ownership (TCO)

- Energy cost
- Initial cost
- Environmental cost
- Operating cost
- Downtime cost
- Decommissioning cost
- Installation cost
- Maintenance cost
- Savings

Design features
SSF side-mounted agitator

SALOMIX SSF side-mounted gear drive agitators are used for mixing and agitating process liquids in demanding industrial applications. They ensure a homogenous mixing result, high process reliability, high efficiency, low operating costs, and low environmental stress.

1 High-efficiency EX3 propeller with adjustable blades

2 Cone design with in-tank bearing
- Ability to handle high radial forces and heavy-duty operations.
- The front bearing gives minimal vibrations for the seal and long seal lifetime
- Sturdy shaft design in combination with in-tank bearing gives minimal shaft bending

3 Fully stainless steel construction
- Propeller in Duplex Grade 3A as standard gives longer lifetime than austenitic material
- SuperDuplex material as option

4 Integrated mechanical seal
- Long seal lifetime due to the in-tank bearing
- Wide range of seal types available
- External flushing can be added into the throttled seal chamber (patent pending).

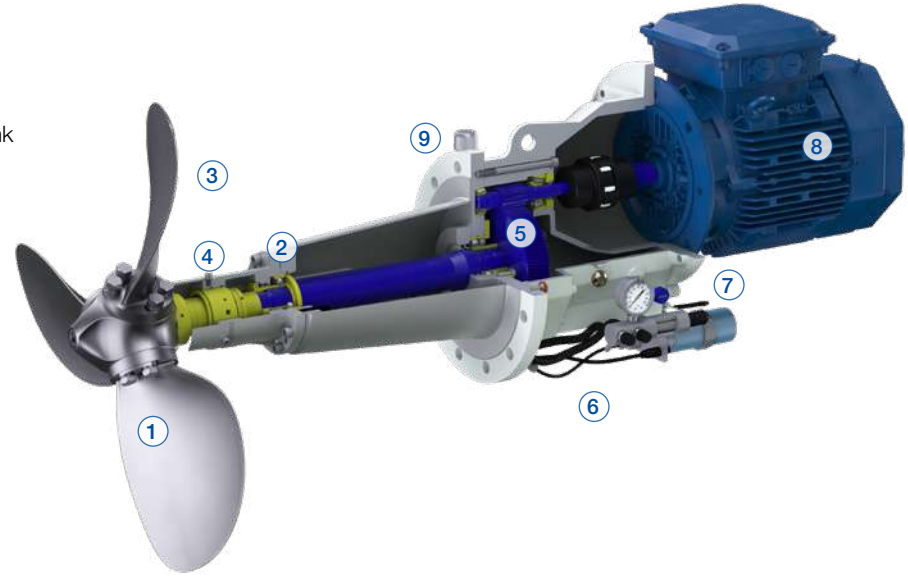
5 Integrated gear box
- Optimized gear performance ensures high reliability
- One stage gear with highest efficiency

6 Optional support legs of different types, depending on agitator size and type of installation
- No support legs for small sizes
- Standard support legs with adjustable height
- Advanced support legs with adjustable height and angle

7 Condition monitoring
- Nipples for manual measuring of shock pulse (standard)
- Vibration and shock pulse sensors for the front bearing (optional)
- Sulzer Sense wireless IoT condition monitoring with cloud services (optional)

8 Prepared for various motor options
- Suitable for IEC and NEMA motor frames

9 Easy installation with Sulzer wall rings



	SSF60	SSF80	SSF100	SSF125	SSF150
Max installed motor (kW / hp)	18.5 / 25	30 / 40	55 / 75	110 / 150	160 / 200
Max propeller diameter (mm / in)	800 / 32	1’000 / 40	1’300 / 51	1’650 / 65	1’700 / 67
Motor speed - 50 / 60 Hz (rpm)	1’500 / 1’800	1’500 / 1’800	1’500 / 1’200	1’500 / 1’200	1’500 / 1’200

Design features
SSA side-mounted agitator

The new innovative design and rigid construction of SALOMIX SSA side-mounted belt drive agitators make them efficient, reliable and service-friendly, while significantly reducing total cost of ownership.

1 High-efficiency EX3 propeller with adjustable blades

2 Robust cantilever design
- Bearing lifetime more than 200’000 hours
- Sturdy shaft

3 Fully stainless steel construction
- Propeller in Duplex Grade 3A as standard, which gives longer lifetime than austenitic material

4 Wide range of seals available
- Reliable mechanical seals
- Gland packing

5 Robust belt drive
- Suitable for heavy-duty loads and pulsations
- Agitator performance can be adjusted through other drive combinations
- Service-friendly belt guard design

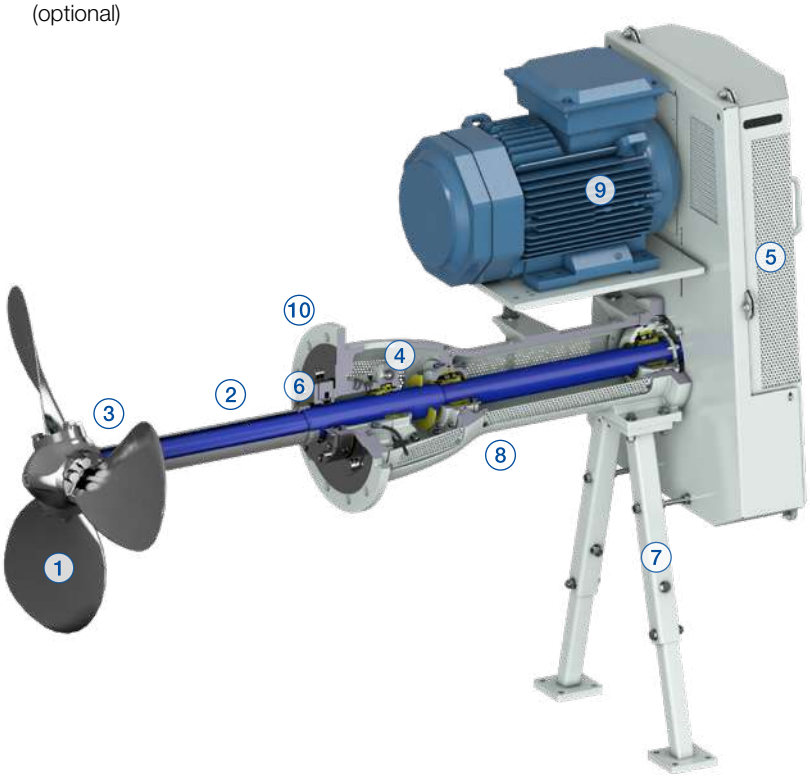
6 Optional SOD shut-off device
- Enables servicing the agitator without emptying the tank
- Reliable and easy to use
- Combined with gland packing or split mechanical seal

7 Support legs
- Standard support legs with adjustable height

8 Condition monitoring
- Nipples for manual measuring of vibration and shock pulse (optional)
- Sulzer Sense wireless IoT condition monitoring with cloud services (optional)

9 Prepared for various motor options
- Suitable for IEC and NEMA motor frames

10 Easy installation with Sulzer wall rings



	SSA60	SSA80	SSA100
Max installed motor (kW / hp)	22 / 30	37 / 50	75 / 100
Max propeller diameter (mm / in)	800 / 32	1’000 / 40	1’300 / 51
Motor speed - 50 / 60 Hz (rpm)	1’000 / 1’200	1’000 / 1’200	1’000 / 1’200

Design features
SLR/STR side-mounted agitator

SALOMIX SLR/STR side-mounted gear drive agitators are ideal for mixing and agitating process liquids in various industrial applications. They ensure a good mixing result plus high reliability and efficiency resulting in low operating costs.

1 High-efficiency hydrofoil SHP propeller
- Strong axial flow and smooth operation
- Fixed and optimized blade angle

2 Cantilever design with strong shaft

3 Compact integrated gear construction

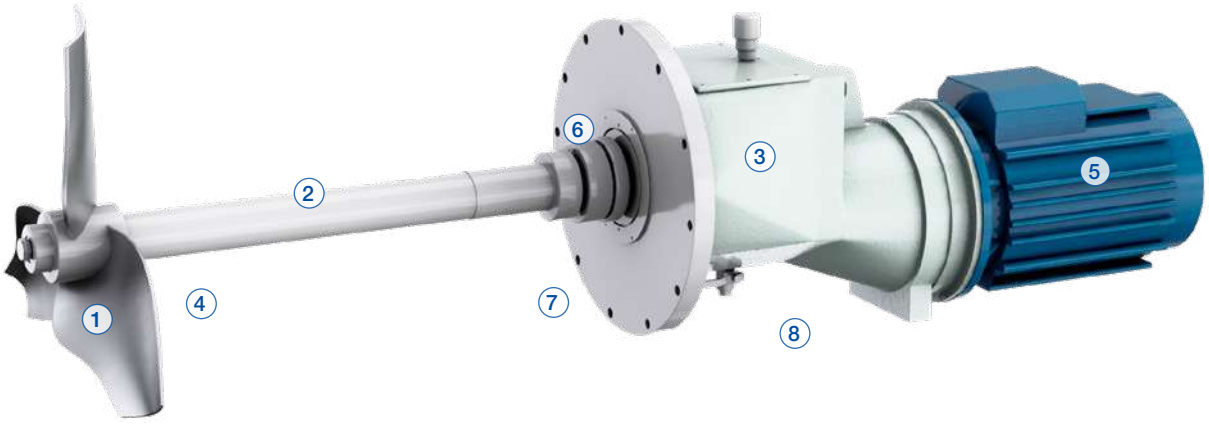
4 Stainless steel design

5 Flange-mounted motors
- SLR model for IEC motor frames
- STR model for NEMA motor frames

6 Wide range of seal types available

7 Easy installation with Sulzer wall rings

8 No support legs needed



	SLR 30 STR 12	SLR 40 STR 16	SLR 50 STR 20	SLR 63 STR 25	SLR 80 STR 30
Max installed motor (kW / hp)	2.2 / 3	4 / 5	5.5 / 7.5	11 / 15	11 / 15
Max propeller diameter (mm / in)	315 / 13	400 / 16	500 / 19	630 / 24	800 / 32
Motor speed - 50 / 60 Hz (rpm)	1’500 / 1’800	1’500 / 1’800	1’500 / 1’800	1’500 / 1’800	1’500 / 1’800

Propellers

EX3 propeller

Sulzer has developed new high-efficiency hydraulics with very high axial thrust and low power consumption. The propeller has been developed with the latest computational fluid dynamics (CFD) technology together with extensive testing in a full-scale laboratory.

- High efficiency gives lowest TCO
- Adjustable blade angles
- Suitable for viscous liquids, such as paper pulp, or water and other clean liquids
- Performance proven in full-scale laboratory trials and at customer sites

With a high-efficiency propeller you can achieve:

- Low power consumption
- Low vibrations due to smooth hydraulics
- Great flexibility to adjust the agitation intensity – either to save power or increase capacity
- A cost-effective agitator

Upgrade your existing SALOMIX agitators with EX3

With a smart retrofit system, the EX3 propeller can replace MX4 propellers also on older SALOMIX side-mounted agitators to achieve lower power consumption or increased capacity.

MX2 non-clogging propeller

In some applications, the handling of long rags or fibers that spin around the propeller is essential for a well-functioning process. The non-clogging MX2 propeller is the perfect propeller for such installations.

- Self-cleaning propeller for long fibers
- Trouble-free operation in applications such as recycled paper and cotton fibers
- Fixed blade angle and a smooth surface; no areas that can cause fiber spinning

SHP propeller

- Hydrofoil propellers
- High efficiency with a strong axial flow
- Well-proven performance

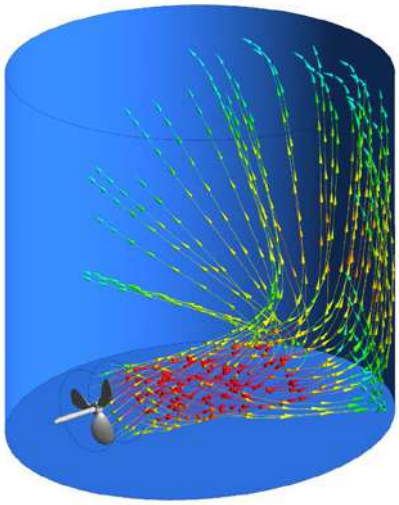
Computational fluid dynamics (CFD)

When designing new propellers, Sulzer uses computational fluid dynamics to find the optimum propeller shape. CFD is also a powerful tool for simulating different mixing applications and movement in agitated tanks. Sulzer has a wealth of experience in CFD for both pump and agitator design.

EX3

SHP

MX2



Seals

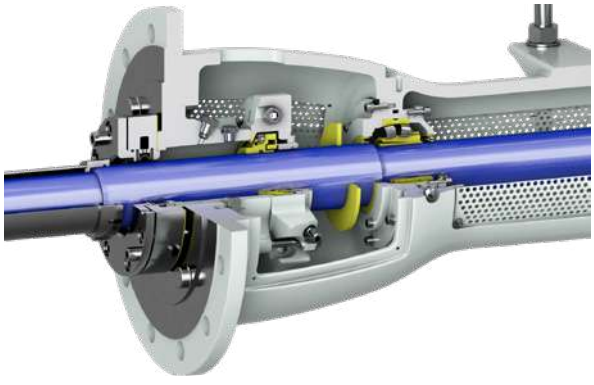
Seals play an important role in agitator reliability and usability and there is a wide variety of seals available. Innovative Sulzer mechanical shaft seals maximize operational reliability and minimize downtime costs. As Sulzer shaft seals require little or no water, they minimize operational and environmental costs.

SALOMIX seal types	Code*	Lubrication code**	SSF	SSA	SLR/STR
Single mechanical seal	SMS	(N)	✓	✓	✓
Single mechanical seal with flush	SMS	(FE)	✓	✓	✓
Single mechanical seal with quench water	SMS	(QF)		✓	
Double mechanical seal	DMS	(BF)	✓	✓	✓
Double mechanical seal with flush	DMS	(BF) + (FE)	✓		✓
Double mechanical seal, grease	DMS	(G)	✓	✓	✓
Gland packing, media-lubricated	GP	(N)		✓	
Gland packing, water-lubricated	GP	(FE)		✓	
Gland packing, grease-lubricated	GP	(G)		✓	

*SMS = single mechanical seal, DMS = double mechanical seal, GP = gland packing
**(N) = no water, (FE) = flushing external, (QF) = quench fluid, (BF) = barrier fluid, (G) = grease

Sulzer SOD shut-off device

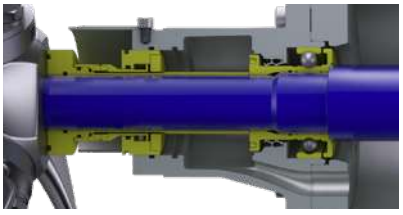
Sulzer SOD shut-off device can be added to SALOMIX SSA. It effectively seals off the tank for servicing the agitator still in situ. The SOD is simple to use and is activated by pressurizing the SOD.



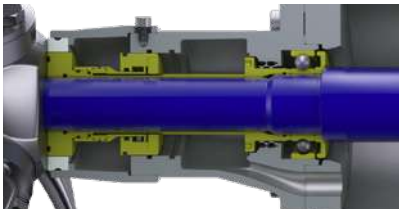
- Unique and patented design
- Easy to use
- Activated by pressure (water or air)
- Combine with split mechanical seal or gland packing
- Large radial clearance provides good seal lifetime
- For clean or contaminated liquids
- Temperature up to 90°C / 195°F
- Pressure up to 4 bar / 58 psi
- EPDM and FKM

Seal options SSF

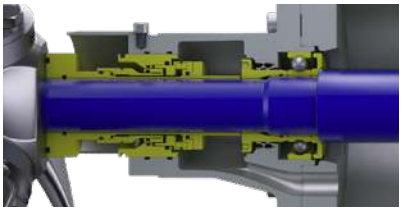
Seals are integrated into the SSF agitator design, which enables optimization of the mechanical seal. The seal is located near the front bearing, minimizing vibrations and radial forces. This gives superior mechanical seal lifetime and reliability. For severe-duty conditions, the operating conditions can be further enhanced by adding external flushing to the throttling seal chamber (patent pending).



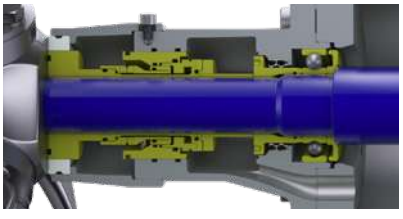
Single mechanical seal SMS



Single mechanical seal with flush SMS (FE)



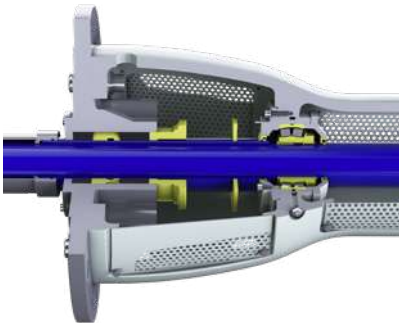
Double mechanical seal with barrier fluid or grease DMS (BF), DNS (G)



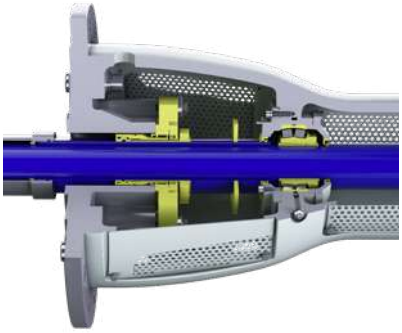
Double mechanical seal with barrier fluid and flush DMS (BF)+(FE)

Seal options SSA

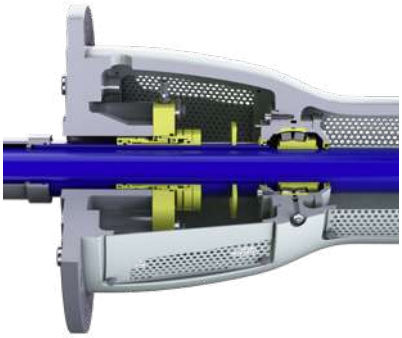
SSA agitators can be equipped with a wide range of seals, spanning from stuffing box to double mechanical seal. The cartridge seal type offers higher reliability than simple component seals.



Stuffing box GP (FE)



Single mechanical seal SMS



Double mechanical seal DMS (BF), DMS (G)

Seal options SLR/STR

SLR/STR agitators can be equipped with a wide range of single and double mechanical seals depending on the application. The seals are integrated into the agitator design.

Instrumentation

SALOMIX agitators can be equipped with various instrumentation options to monitor the condition of the agitator. With proper condition monitoring it is possible to identify changes in condition parameters and find potential faults at an early stage. It can be used to optimize preventive maintenance and make savings.

Vibration and temperature monitoring

- SPM nipples to enable manual vibration measurement
- Vibration sensor to be connected to the customer's control system
- Temperature sensor (PT-100) can be installed in the agitator bearings and connected to the customer's control system
- Wireless temperature and vibration measurement with Sulzer Sense

Wireless condition monitoring

Sulzer Sense wireless IoT condition monitoring solution includes wireless sensors that are attached to an agitator, pump, motor or any rotating equipment. The sensors measure temperature and vibration and send the data to the cloud with the help of a gateway. This means that the operating status of the equipment can be remotely monitored 24 hours a day, 7 days a week.

Sulzer Sense devices are battery-powered. Installation is quick and easy, as the system is wireless. The system is easy to operate with a mobile phone, tablet or computer wherever you are. It is also possible to set an alert value, and the system will give alarm if the value is exceeded.

Optimal dilution with Dilco

The SALOMIX dilution cone Dilco is the ideal solution when adding dilution fluid into the agitated tank. By using the Dilco, the agitator is delivered as a system, with an optimized design that is integrated with the agitator and its hydraulics. It does not only offer the best process performance, it also gives mechanical stability with low vibrations and low stress on the blades. Dilco is integrated with the Sulzer wall rings, enabling quick and easy installations.

Wall rings

Wall rings are designed to enable quick, accurate and safe agitator installation to the tank. The wall ring is first installed to the tank wall and then the agitator is fastened to the wall ring. There are different types of wall rings available for steel and concrete tanks. The right kind of wall ring saves time and guarantees successful installation.

Wall ring types:
- Solid stainless steel or lined construction
- ISO and ANSI versions

CT
- Concrete tank
- To be grouted into the tank

SI
- Steel inside
- Threaded holes for screws

SO
- Steel outside
- Easy access to the counter nuts

Support leg options

Support legs are designed to enable rigid and easy installation of the agitator. The need for support legs is dependent on the size of the agitator and motor but also on the stiffness of the tank wall. If the tank wall is weak, it is recommended to install agitator support legs to ensure good and stable installation. There are two kinds of support legs available with various adjustment options.

No support legs
- SSF (depending on size)
- SLR

Standard adjustable support legs
- Adjustable height

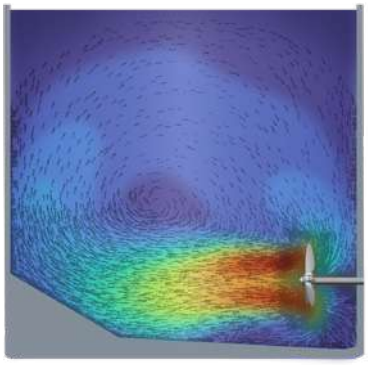
Advanced adjustable support legs
- Adjustable length, angle and direction

Application knowhow

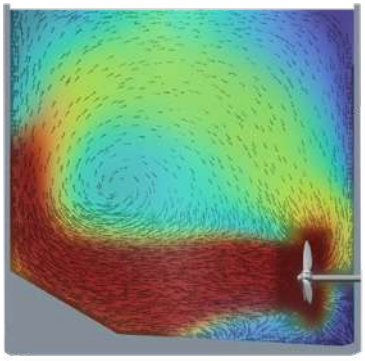
Sulzer has extensive knowledge of designing agitator systems. Selecting an agitator may be an easy task if you can oversize it, but too much agitation will result in costly and unnecessary excess power consumption. Sulzer has the expertise to match the right agitator for the application. You can be confident that there will not be too much agitation – nor too little.

Agitation in stock chests

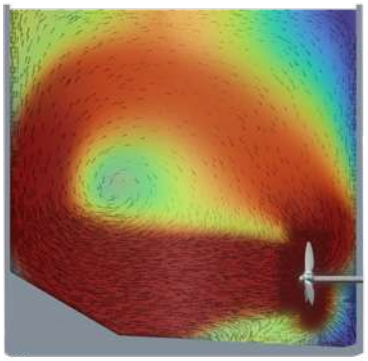
For stock chests with pulp, Sulzer uses three different agitation intensities to ensure the correct mixing result. Matching the process needs with these agitation levels ensures the right agitation level and minimal power consumption.



Level 1: Bottom clean



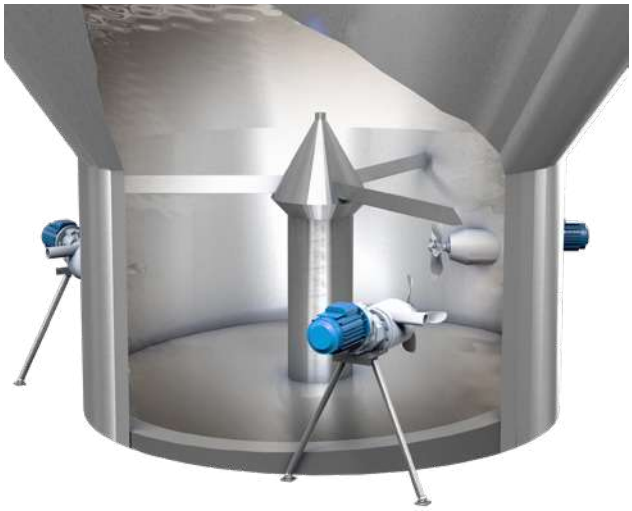
Level 2: Storage



Level 3: Full mixing

Tower management system

Sulzer's vast wealth of experience within the pulp and paper industry has enabled us to develop smart solutions, like dilution process concepts and our Tower Management System for HD towers. Strict consistency control and the prevention of channeling and stagnant pulp are essential in HD towers and blow tanks. SALOMIX agitators equipped with Dilco ensure optimal dilution performance, which together with the complete GLI agitation system gives the most reliable and stable process.



Spares and service

When your agitator needs service, you should not have to worry about spending valuable time searching for the right parts – or even worse, finding out that some small but vital parts are missing. With Sulzer agitator service kits, you get everything you need in one package.

Service kits

SSA
- Propeller service kit
- Gland packing service kit
- Bearing unit service kit
- SOD service kit

SSF
- Propeller service kit
- Shaft seal service kit

SLR
- Shaft seal service kit

1 Propeller service kit SSA, SSF
Sole plates
Pins
O-rings
Impeller screws
Hexagon head screws
Washers

2 Shaft seal service kit SSF, SLR/STR
Mechanical seal (SLR/STR only)
Radial seals
Antifriction bearing (SSF only)
Grease regulator (SSF only)
O-rings (SSF only)
Gasket (SSF only)
Wear sleeve (SSF only)
Bushing for seals with FE (flushing external)

3 Gland packing service kit SSA
Gland packing
Lantern ring

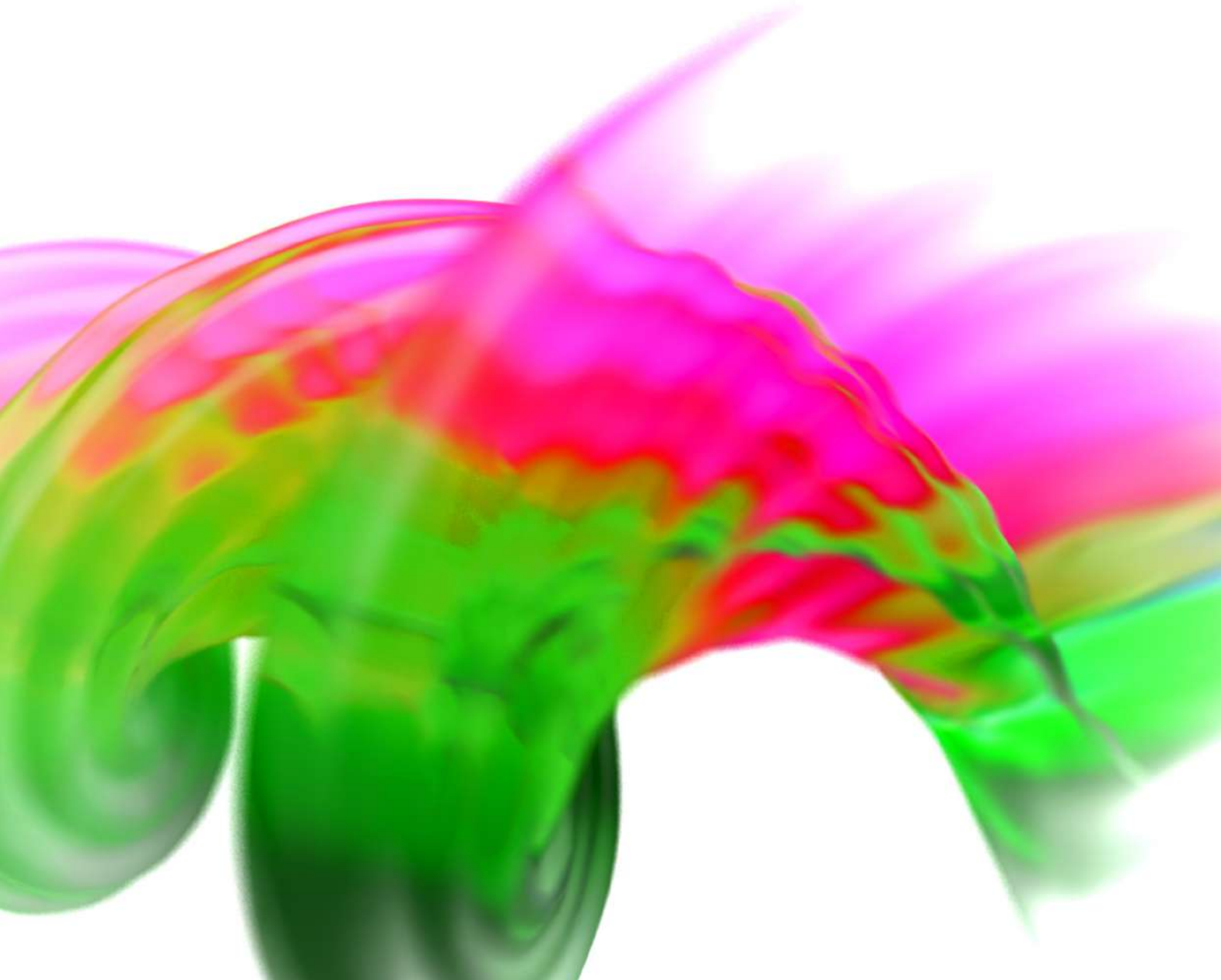
4 Bearing unit service kit SSA
Radial lip seals
Bearing shells
Antifriction bearings
Deflector

5 SOD service kit SSA
Rubber element
O-ring
Gasket

sulzer.com

The Sulzer Flow division keeps your processes flowing. Wherever fluids are treated, pumped, or mixed, we deliver highly innovative and reliable solutions for the most demanding applications.

The Flow division specializes in pumping solutions specifically engineered for the processes of our customers. We provide pumps, agitators, compressors, grinders, screens and filters developed through intensive research and development in fluid dynamics and advanced materials. We are a market leader in pumping solutions for water, oil and gas, power, chemicals and most industrial segments.

E10645 en 1.2025, Copyright © Sulzer Ltd 2025

This brochure is a general presentation. It does not provide any warranty or guarantee of any kind. Please, contact us for a description of the warranties and guarantees offered with our products. Directions for use and safety will be given separately. All information herein is subject to change without notice.